SPYDER

WIFI Top Controller

For

3000GT Spyder SL and VR4

Actual Size Shown

Features and Benefits

- Remote control operation of convertible roof
- Remote control operation of tonneau
- Interfaces with most multi channel car alarm systems
- Interrupt and reverse direction of top or tonneau operation
- Automatic continuation after Safety Stop
- Adjustable closure timer
- Low standby current drain
- Small 2.6 x 4.25 x 1.12 footprint
- Easy installation

Table of Contents

General Description 3
Functional Block Diagram 3
Pin Assignment 4
Functional Description 4
Specifications 5
PCB Layout 6
Installation Instructions 7
Wiring Color Codes (WIFI TOP™ Harness) 7
Wiring the Harness 8
Audiovox APS-996a Specific Programming 9
Troubleshooting the Installation 9
Remote Top Testing 10
Adjustment Procedure for Closure Timer using R19/R37 11
Remote Start Neutral Safety Switch 12
Installing The Magnetic Switch and Magnet 13
Magnetic Switch and Relay Circuit 14
Installing the APS-996a Alarm 15
APS-996a Wiring for 3000GT 16
Wiring Color Codes (APS-996a Alarm) 17
APS-996A Tach Programming 17
Remote Start Safety Tests 18
How to Read the 3000GT Wiring Diagrams 18
3000GT Specific Wiring diagrams 18

Table of Tables

Table 1 - Pin Assignment 4
Table 2 - Specifications 5
Table 3 – WIFI TOP™ Harness 7
Table 4 - APS-996a Specific Programming 9
Table 5 - APS-996a Wiring for 3000GT 16

Table of Figures

Figure 1 - WIFI TOP™ Block Diagram 3
Figure 2 – PCB Top Side Artwork 6
Figure 3 – PCB Bottom Side Artwork 6
Figure 4 - Neutral Safety Circuit 14

General Description

The JNS WIFI TOP™ consists of precision timers and relays that simulate the operation of the rocker switches for the top and tonneau. In the standby mode the Interface is monitoring the trigger outputs of the car alarm system. When an extra channel of the car alarm system is accessed by the remote control the system wakes up and powers the Hardtop ECU. Depending on the channel selected, the hardtop or tonneau is opened or closed according to preset timing. Hardtop closure is timed to the safety stop and automatically actuated a second time to complete the closure.

Power to the system is applied for a limited time to prevent battery drain. If additional triggers are detected during system power up, the system will operate the appropriate function until the system timer expires. If the trigger detected is for the opposite function, the unit will reverse operations subject to the system timer. If the system timer times out while the hardtop or tonneau is being actuated the next trigger received will start a new system timer and allow completion of operations.

Functional Block Diagram

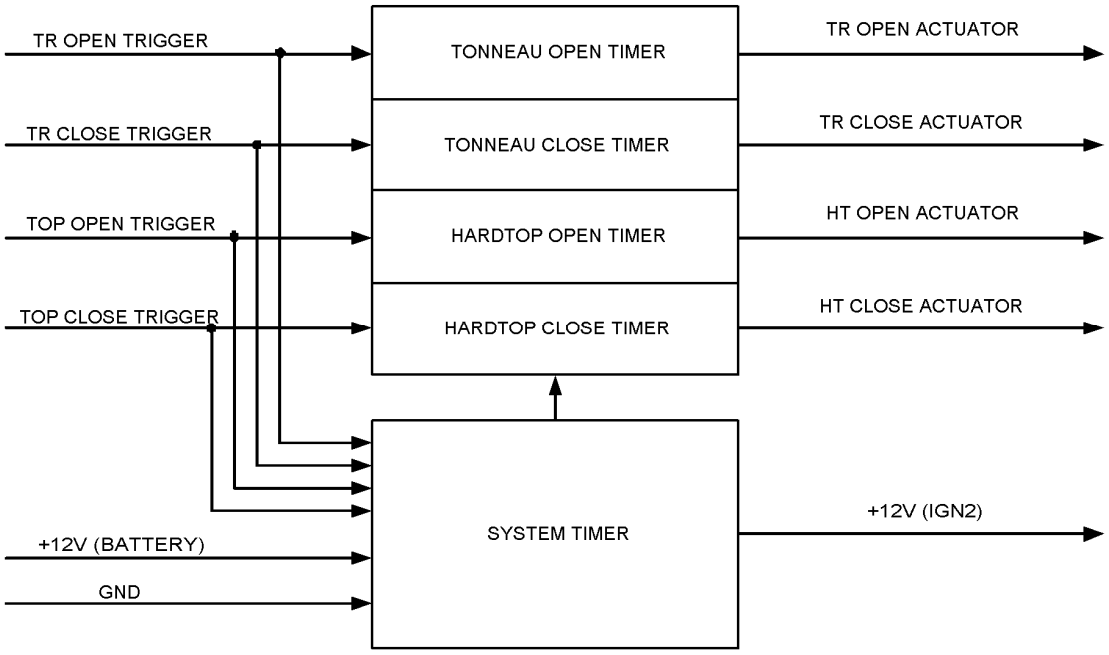


Figure 1 - WIFI TOP™ Block Diagram

Pin Assignment

DB25 PIN	DESCRIPTION
1	+12V (Battery)
2	Gnd
5	Tonneau Open Trigger
6	Hardtop Close Trigger
7	Tonneau Close Trigger
8	Hardtop Open Trigger
10	Tonneau Open Actuator
11	Tonneau Close Actuator
12	Hardtop Open Actuator
13	Hardtop Close Actuator
14	+12V (Ign2)

Table 1 - Pin Assignment

Functional Description

CAUTION Care should be taken to stand clear of the top mechanism during remote activation. Once activated, the mechanism will operate automatically until the timers expire.

Tonneau Open

An active low pulse on the tonneau open trigger starts a 68 second system timer and an 8 second timing cycle to open the tonneau. The tonneau open trigger also terminates an active tonneau close cycle allowing the operator to reverse operations without waiting for an active cycle to complete.

Tonneau Close

An active low pulse on the tonneau close trigger starts a 68 second system timer and an 8 second timing cycle to close the tonneau. The tonneau close trigger also terminates an active tonneau open cycle allowing the operator to reverse operations without waiting for an active cycle to complete.

Hardtop Open

An active low pulse on the hardtop open trigger starts a 68 second system timer and a 29 second timing cycle to open the hardtop. The hardtop open trigger also terminates an active hardtop close cycle allowing the operator to reverse operations without waiting for an active cycle to complete.

Hardtop Close

An active low pulse on the hardtop close trigger starts a 68 second system timer and a 25[1] second timing cycle to close the hardtop to the safety stop. A second timer automatically fires for 13 seconds to complete the top closure. The hardtop close trigger also terminates an active hardtop open cycle allowing the operator to reverse operations without waiting for an active cycle to complete. If a hardtop open cycle is terminated quickly after it was started, the hardtop close command will cause the hardtop to delay at the safety stop for a period of time. ***EXTREME*** care should be taken to avoid touching any part of the mechanism until the operations are completed

Specifications

Parameter	Pin	Test conditions	Min	Typical	Max	Units
Input voltage	1			12		V
Input current	1	Standby		5		mA
Trigger voltage	5,6,7,8				4	V
Sink current	5,6,7,8	Active trigger			5	mA
Output voltage	10,11, 12,13, 14	Active		12		V
Source current	14	Active		20		A
Source current	10,11, 12,13	Active		20		A
Tonneau open time				8		S
Tonneau close time				8		S
Hardtop open time				29		S
Hardtop close to Safety time		R19 =174K[1]	22	25	27	S
Hardtop close Time				13		S
System active time				68		S

Table 2 - Specifications

[1]Hardtop to safety time can be changed by turning the screw for R37 which can be reached through the front panel.

PCB Layout

R19 and R37 are located on the bottom side of the PCB and are highlighted in the red boxes. Some versions of the PCB do not have a silkscreen legend on the bottom side so you need to carefully match up the artwork features to the figure below.

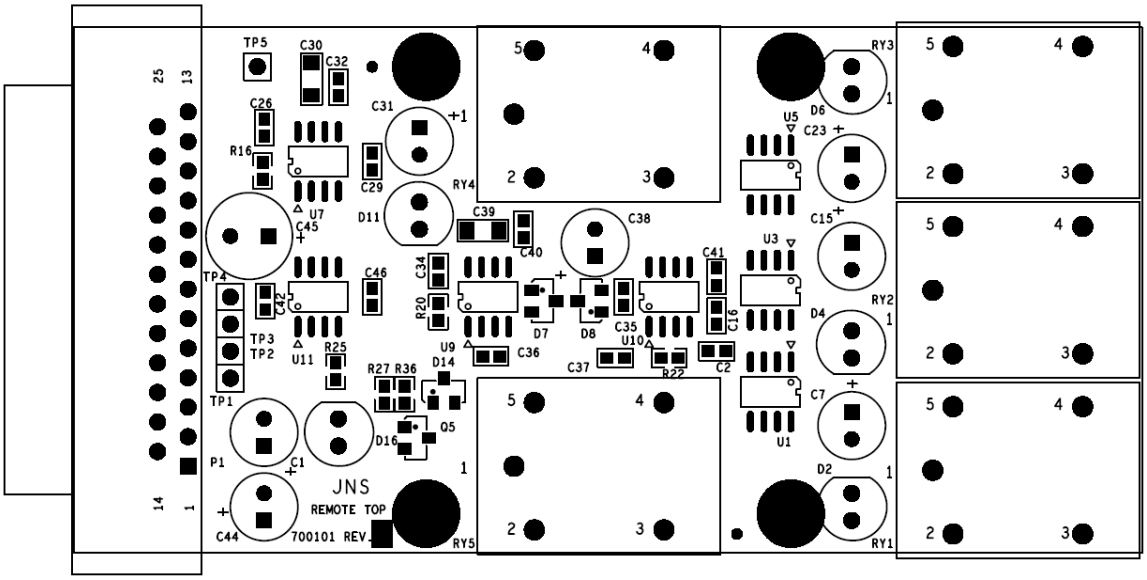


Figure 2 – PCB Top Side Artwork

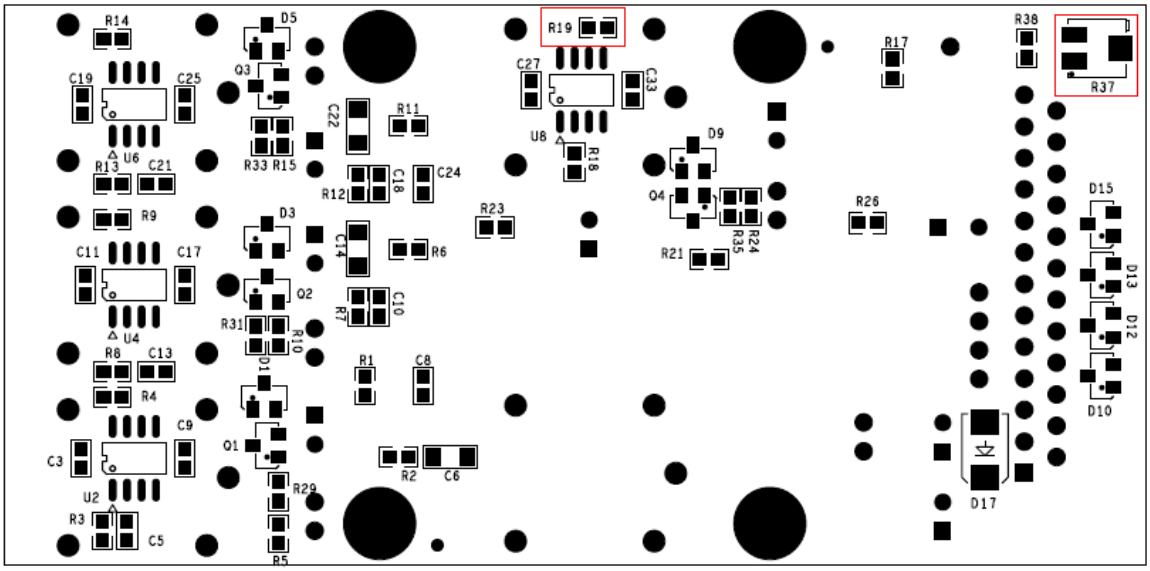


Figure 3 – PCB Bottom Side Artwork

Installation Instructions

WIFI TOP™ Interface Harness

SOURCE			DESTINATION	
DB 25 PIN	Color	Description	Connector - Pin	Color
1	R	+12V (Battery)	C59-6	W
2	B	Gnd	Chassis	B
5	W	Tonneau Open Trigger	Dark Blue Wire[1]	
6	Y	Hardtop Close Trigger	Light Blue/Green Wire[1]	
7	O	Tonneau Close Trigger	Light Blue/Black Wire[1]	
8	G	Hardtop Open Trigger	Light Blue/Red Wire[1]	
10	L	Tonneau Open Actuator	D48-10	LG-B[2]
11	P	Tonneau Close Actuator	D48-9	B-W[2]
12	BR	Hardtop Open Actuator	D48-3	GR-R[2]
13	GR	Hardtop Close Actuator	D48-11	L-W[2]
14	CL	+12V (Ign2)	D48-4	R

Table 3 – WIFI TOP™ Harness

Wiring Color Codes (WIFI TOP™ Harness)

W	=	White	R	=	Red
B	=	Black	Y	=	Yellow
LG-B	=	Light Green with Black stripe	O	=	Orange
B-W	=	Black with White stripe	G	=	Green
GR-R	=	Grey with Red stripe	L	=	Blue
L-W	=	Blue with White stripe	P	=	Purple
BR	=	Brown	GR	=	Grey
CL	=	Clear			

[1] Wire colors from the Audiovox APS-996a extra channels. These will be different if you use another car alarm system.
[2] Wire colors from the 3S manual. They were different colors in my car.

Wiring the Harness

Red Wire: +12V Input (DB25 Pin 1)
Connect this wire to the +12VDC constant source found at the ignition harness connector C59 pin 6 located under the driver side dash. It is the White wire. Use a fused connection or tie in after the car alarm system fuse.

Black Wire: Gnd (DB25 Pin 2)
Connect this wire to Chassis ground. Remove the driver's side center console cover and use one of the relay mounts to attach a ground lug. Make sure the ground wire is FIRMLY attached to the bare metal surface.

White Wire: Tonneau Open Trigger (DB25 Pin 5)
Connect this wire to one of the extra channels from your car alarm. In my system I used the Dark Blue wire that is the APS-996a Channel 3 Output.

Yellow Wire: Hardtop Close Trigger (DB25 Pin 6)
Connect this wire to one of the extra channels from your car alarm. In my system I used the Light Blue / Green wire which is the APS-996a Channel 5 Output.

Orange Wire: Tonneau Close Trigger (DB25 Pin 7)
Connect this wire to one of the extra channels from your car alarm. In my system I used the Light Blue / Black wire which is the APS-996a Channel 6 Output.

Green Wire: Hardtop Open Trigger (DB25 Pin 8)
Connect this wire to one of the extra channels from your car alarm. In my system I used the Light Blue / Red wire which is the APS-996a Channel 7 Output.

Blue Wire: Tonneau Open Actuator (DB 25 Pin 10)
The D48 connector is located under the control switch garnish. Find pin 10 on the connector. It will have 12V applied when the tonneau switch is operated to the open position. Although the manual states this wire is Light Green / Black I found it to be Green in my car.

Purple Wire: Tonneau Close Actuator (DB 25 Pin 11)
The D48 connector is located under the control switch garnish. Find pin 9 on the connector. It will have 12V applied when the tonneau switch is operated to the close position. Although the manual states this wire is Black / White I found it to be Black in my car.

Brown Wire: Hardtop Open Actuator (DB 25 Pin 12)
The D48 connector is located under the control switch garnish. Find pin 3 on the connector. It will have 12V applied when the hardtop switch is operated to the open position. Although the manual states this wire is Grey / Red I found it to be Yellow in my car.

Grey Wire: Hardtop Close Actuator (DB 25 Pin 13)
The D48 connector is located under the control switch garnish. Find pin 11 on the connector. It will have 12V applied when the hardtop switch is operated to the close position. Although the manual states this wire is Blue / White I found it to be Light Blue in my car.

Clear Wire: +12V Ign2 Output (DB 25 Pin 14)
The D48 connector is located under the control switch garnish. Find pin 4 on the connector. It will have 12V applied when the key is turned to the "On" position.

WIFI TOP™ Module Location

The best locations for the interface module are under the rocker switches or behind the ECU. To install the interface module you will need to loosen the trim piece that holds the rocker switches in the center console. The interface module at 2.6 x 4.25 x 1.12 is small enough to slip into the open slot. You can zip tie it to the wire harness or use double-sided tape as you prefer. Simply plug the module into the Interface harness making sure it is fully seated.

Audiovox APS-996a Specific Programming

This section is specific to my installation and programming of the remote control. These are the key combinations I programmed into the APS-996a channels.

APS-996a Channel	Remote Key Combination	Function
1	"Lock"	Lock
2	"Unlock"	Unlock
3	"Key"	Tonneau Open
4	----	----
5	"Key" + "Lock"	Hardtop Close
6	"Option"	Tonneau Close
7	"Key" + "Unlock"	Hardtop Open

Table 4 - APS-996a Specific Programming

Troubleshooting the Installation

There are 5 LEDs to assist diagnosing problems with the installation; however they are not viewable unless the case is opened. The LEDs indicate the active timing cycle(s).

D2 = Tonneau Open LED
D4 = Tonneau Close LED
D6 = Hardtop Open LED
D11 = Hardtop Close LED

D16 = System LED

There are also Test points for each input trigger and ground. These are labeled as follows:

TP1 = Tonneau Open Trigger
TP2 = Hardtop Close Trigger
TP3 = Tonneau Close Trigger
TP4 = Hardtop Open Trigger
TP5 = Ground

The installation can be tested independently from the car alarm system by manually triggering the timer circuits. To cause a timing cycle to begin, simply make a momentary connection between the appropriate trigger test point and the ground test point. The system will respond by lighting the appropriate LED and driving the top mechanism.

When any of the four TPs is triggered, the system timer will power the car as though the ignition switch were in the ON position. All electrical systems (such as Climate Control and Radio) that were running when the car was last turned off will resume operating until the system timer expires.

Remote Top Testing

Key sequences

- Press and hold “KEY” button for 4 seconds. The tonneau should open.
- Press the “OPTION” button. The tonneau should close.
- Hold the “KEY” button and then press the “UNLOCK” button. The hardtop should open.
- Hold the “KEY” button and then press the “LOCK” button. The hardtop should close. If the hardtop fails to complete closure after the safety stop or spends an excessive time in the safety position, follow the adjustment procedure for the closure timer.
- Press the “KEY” button twice within 3 seconds. The car should remote start (if equipped). All key sequences listed above will function under Remote Start as well as battery power only.

The Remote Top Key Sequences WILL NOT initiate any actions if the car is running normally after being started by the key.

Adjustment Procedure for Closure Timer using R19/R37

The closure timer determines how much time is spent raising the top to the safety stop position. In order to function properly the top must reach the safety stop before the timer expires. If the timer is too short then the top will hang prior to the safety stop and will end up in the safety position until a subsequent Top Close command is issued. If the timer is too long then the top will spend extra time in the safety position prior to closure. ***EXTREME*** care should be taken to avoid touching any part of the mechanism until the operations are completed.

Fine adjustments in the Hardtop to Safety time are made using the R37 screw adjustment accessible through the front panel using a jewelers screwdriver. A total range of approximately 5 seconds is available. Coarse adjustments can be made by changing the value of R19. For every 10K change in R19 the timer range will shift approximately 1 second.

<u>Access R37 through the front panel</u>

R37 access hole →

<u>Timer too short (Top hangs prior to safety stop)</u>

- Turn R37 counter-clockwise (CCW) to lengthen the timer. Each full turn will add approximately 1 second to the timer.
- If a timer longer than approximately 27 seconds is needed then R19 may need to be increased

<u>Timer too long (Top spends excessive time at safety stop)</u>

- Turn R37 clockwise (CW) to shorten the timer. Each full turn will subtract approximately 1 second from the timer.
- If a timer shorter than approximately 22 seconds is needed then R19 may need to be decreased

<u>Changing adjustment range using R19</u>

- R19 default value is 174K ohms
- Each <u>increase</u> of 10K in the value of R19 will shift the timer range <u>higher</u> by approximately 1 second. For example if R19 is increased to 185K then the timer range will move from 22-27 to 23-28 seconds.
- Each <u>decrease</u> of 10K in the value of R19 will shift the timer range <u>lower</u> by approximately 1 second. For example if R19 is decreased to 162K then the timer range will move from 22-27 to 21-26 seconds.

Remote Start Neutral Safety Switch

First a disclaimer. Installing a remote start capability in a manual transmission car is not safe, probably voids the security system warranty, and is possibly against the law. The author takes no responsibility for any consequences from the correct or incorrect use of the following information.

Now with that out of the way the author recognizes that many people might be installing remote start into their MTX 3000GT without hooking up any safety devices to prevent accidental start while in gear. This instruction, if followed correctly, will provide an additional measure of safety for remote starting.

Benefits

- Prevents remote starting with the car in gear
- Prevents manual starting in gear with the clutch out
- Uses the stock starter disable circuits so it works with any alarm setup

Parts Needed

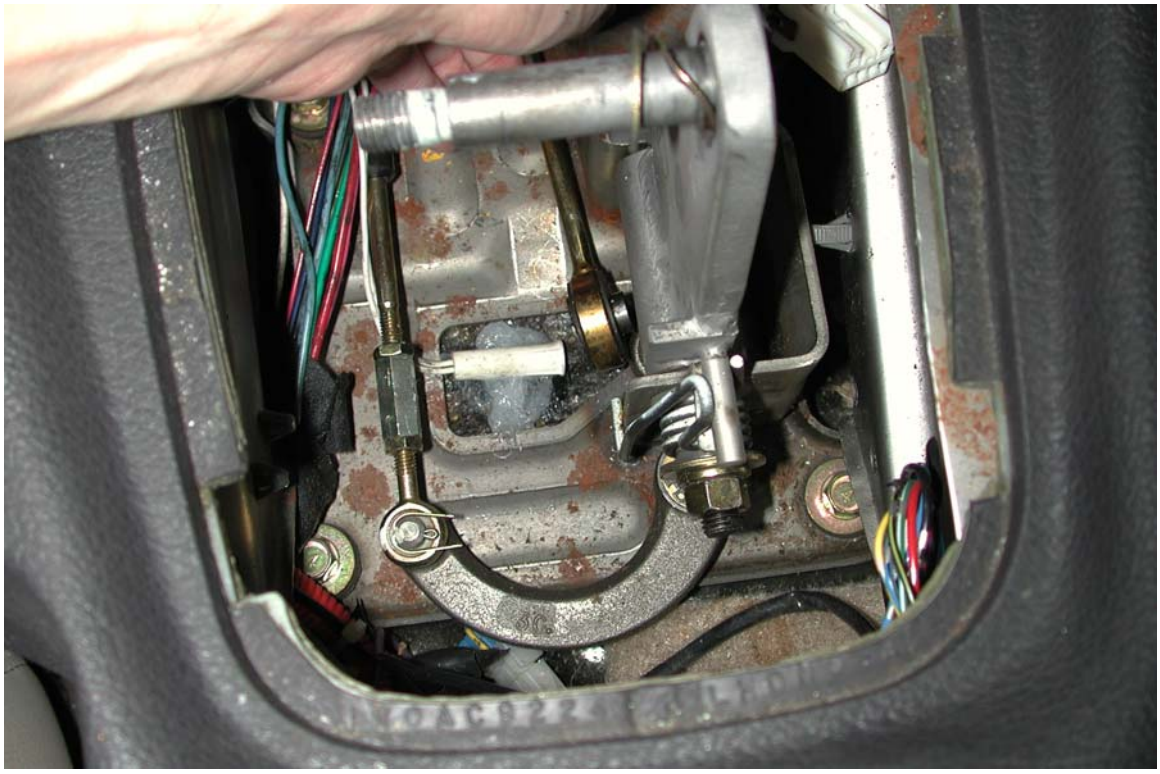
- Magnetic switch
  - Normally open type (continuity when the magnet is close)
  - Recessed mount type (cylindrical type allows perpendicular mount)
  - AMS-21 or equivalent is suggested (about $2 at this site)
  - Go here for a datasheet for the part
- Relay
  - Standard automotive type (about $1.50) (Note that if you purchased the APS-996a alarm you should have an unused relay)
  - Go Here for a primer on relays
- Other stuff
  - I used RTV and a tie wrap to secure the magnet and switch
  - I used T-Taps to connect to existing stock wiring

Stock locations for stuff

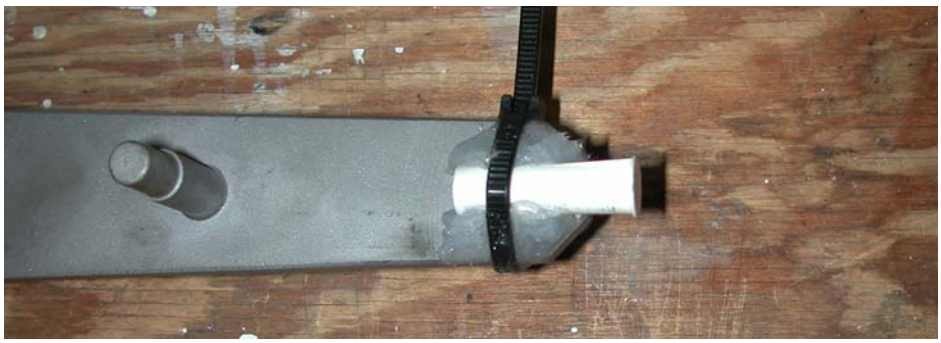
- Theft Alarm Starter Relay C56
  - This is mounted on the driver's side of the center console under the carpet. It is the relay closer to the shifter. Not sure if this is standard on all versions of the car.
- Ignition wire C59 Pin 5
  - Black/Yellow wire to the left of the steering column

Installing The Magnetic Switch and Magnet

I installed the magnetic switch horizontally under the shift arm. It is positioned so that the magnet will be perpendicular to the switch when the shifter is in neutral. When in gear, the magnet will be away from the switch and the switch will be open circuited. I used clear RTV to hold the switch and allowed it to set overnight



I found that the magnet needs to be installed very low on the shift arm. I have Bob Stirling's 3S short shifter which has a flat side suitable for mounting the magnet. At first I intended to use only a tie wrap, but the magnet was wiggling out of position so I secured it with RTV as well. The tie wrap is touching the post that attaches the shift linkage. I also notched the plastic of the magnet so the tie wrap would bite into the magnet and keep it from slipping.



Magnetic Switch and Relay Circuit

The circuit is pretty basic. A magnetic switch is mounted underneath the shifter. The magnet is mounted on the shifter arm. When the shifter is directly over the magnetic switch (neutral position) there is continuity between the terminals of the magnetic switch. Any other position besides neutral results in an open circuit at the magnetic switch. The magnetic switch is connected to a SPDT relay so that when the switch is closed (neutral), the relay coil is energized by ignition voltage and the common output (pin 30) is connected to an open circuit (pin 87). If the car is in any gear, the relay coil is not energized and the common output (pin 30) is connected to ground (pin 87a). If there is a diode connected across the relay coil REMOVE IT to avoid ground noise that could trigger your Remote Top Interface circuits.

The common terminal (pin 30) is connected to the stock Theft Alarm Relay at connector C56-3 (G-B wire). When this wire is grounded, the Starter Relay is disabled.

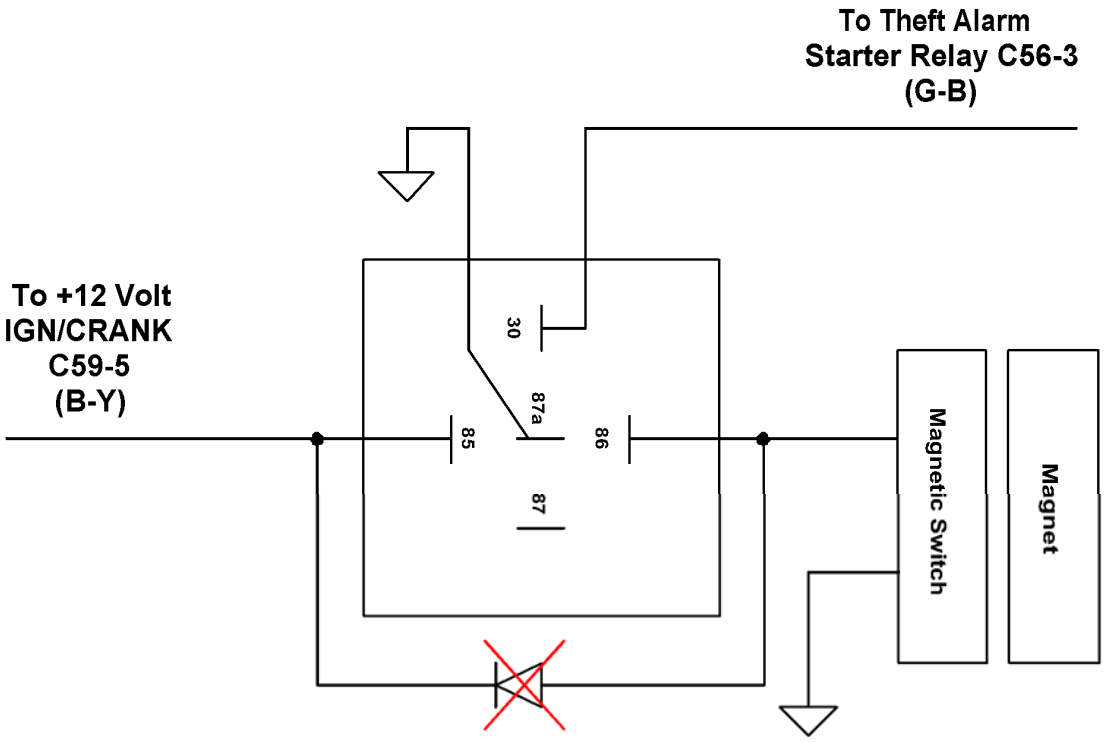


Figure 4 - Neutral Safety Circuit

Make sure the Ground connections in this circuit are FIRMLY attached to the bare metal of the center console. It is best to select a different location than the one you used for the Remote Top Interface Module ground.

Verify that the car WILL NOT start unless in neutral BEFORE unplugging the clutch safety switch.

Installing the APS-996a / 997 / 998 Alarm

The APS-99x series installation guides cover everything you need to know so I will just add some suggestions for where to locate things.

The Brain (main unit). Locations for this are limited to high up in the dash sort of behind the gauge cluster or in front of the ECU. For the location high up in the dash there is nothing but the firewall material to attach to so I drilled some small holes and attached the Brain mounts using wire ties.

The Valet Switch My chosen location for this was on the underside of the knee protector panel. I drilled a hole in the panel and used a knife to cut a large countersink in the padding to accept the switch.

The LED My chosen location for this was the blank panel that snaps into the knee protector near the ignition. I drilled a small hole in the center of the panel and glued the LED in. This location works fine for a Spyder since the active exhaust switch is no longer is this location.

The Red Toggle I'm not going to give this one away but I will say that it's extremely well hidden and unlikely to be found even by a valet who smokes

The Hood Switch This one is simply not needed if you follow my wiring guide to wire into the stock hood switch.

The Siren Options are limited due to size. I zip tied mine to the cross bar under the bumper where the horns are located. It can also go inside the driver's wheel well if you remove the fender liner.

The Antenna I was able to get mine to the location where the driver's seat belt slips into the quarter panel. There was just enough cable to run it under the door sill. If you keep it under the dash it should be mounted as high as possible.

The Shock Sensor I attached this using double sided tape to the ETACS module which is located behind the knee protector. The shock sensitivity is pretty high so you might have to adjust it, unfortunately this location won't allow an adjustment after the knee protector is reinstalled.

APS-996a Wiring for 3000GT

SOURCE APS-996a			DESTINATION 3000GT		
Harness	Color	Description	Connector - Pin	Location	Color
Power	R-W	Battery 1 Source	C59-6 (use fuse)	Left of column	W
Power	R	Battery 2 Source	C59-6 (use fuse)	Left of column	W
Power	Y	Starter Output	C59-5	Left of column	B-Y
Power	L	IGN1	C59-4	Left of column	B-W
Power	G	IGN2	C59-2	Left of column	L-B
Power	P	ACC	C59-3	Left of column	L
Main	W-R	Power for Parking lights	C59-6 (after fuse)	Left of column	W
Main	W	Parking Lights	C69-6	Junction Block	G-W
Main	P	(+) Door trigger		(not used)	
Main	G	(-) Instant Trigger	C65-18 (use diode)	ETACS unit	L-B
Main	GR-B	Negative Inhibit + Trigger when armed	C65-18 (use diode)	ETACS unit	L-B
Main	BR-B	Positive Inhibit	C61-3	Brake	G
Main	B	Chassis Ground		Use ground lug	
Main	G-O	Tachometer Input	C90-58	ECU (2nd plug from top)	W
Main	BR	(-) Door Trigger	C65-10	ETACS unit	R-G
Main	B-W	Horn Output	C57-2	Clock spring (right of column)	G-B
Door	R	Door Lock	C66-56	ETACS unit	BR-W
Door	G	Door unlock	C65-3	ETACS unit	BR-L

Table 5 - APS-996a Wiring for 3000GT

Wiring Color Codes (APS-996a Alarm)

W	=	White	R	=	Red
B	=	Black	Y	=	Yellow
B-W	=	Black with White stripe	G	=	Green
G-R	=	Green with Red stripe	L	=	Blue
L-W	=	Blue with White stripe	P	=	Purple
L-B	=	Blue with Black stripe	BR	=	Brown
W-R	=	White with Red stripe	O	=	Orange
R-W	=	Red with White stripe			
G-W	=	Green with White stripe			
W-B	=	White with Black stripe			
GR-B	=	Grey with Black stripe			
BR-B	=	Brown with Black stripe			
G-O	=	Green with Orange stripe			
BR-W	=	Brown with White stripe			
BR-L	=	Brown with Blue stripe			
G-B	=	Green with Black stripe			
R-G	=	Red with Green stripe			

APS-996A Tach Programming

- Ignition On
- Press and release the Valet button three times (siren chirps)
- Ignition to ACC (siren makes long chirp)
- Push and HOLD Valet button, start engine
- Parking lights flash on and off—let them flash maybe ten times, then release button. Lights will come on steady, then go out after three seconds

If you're not getting the siren chirps at all, you might have the thick blue ignition wire hooked up incorrectly.

If the chirps work, but the parking lights don't flash when you start the engine, you probably have the wrong tach wire, or a bad connection

Remote Start Safety Tests

- Push in the clutch and attempt to start the car in any gear. It should fail to start.
- Turn the Red toggle switch OFF. Attempt to Remote Start the car. It should fail to start.
- Remote Start the car. Touch the brake pedal. It should shut down.
- Remote Start the car. Rev the accelerator. It should shut down.
- Remote Start the car. Pull the hood latch. It should shut down.

If any of these tests fail, consult the manual and check the wiring immediately.

How to Read the 3000GT Wiring Diagrams

Each included page from the 3000GT electrical manual shows a relevant connector number at the bottom of the page as well as information somewhere in the body of the page regarding signals in that connector. For example, the MFI circuit page is included to show the Parking Lights wire information. This wire is G-W (green white) and can be found at C-69 pin 6. On the bottom of the diagram you can find the connector number and a symbol showing that 8 pins are present on this connector. I highlight pin 6 here:

C69-6

1	2	3	4
5	6	7	8

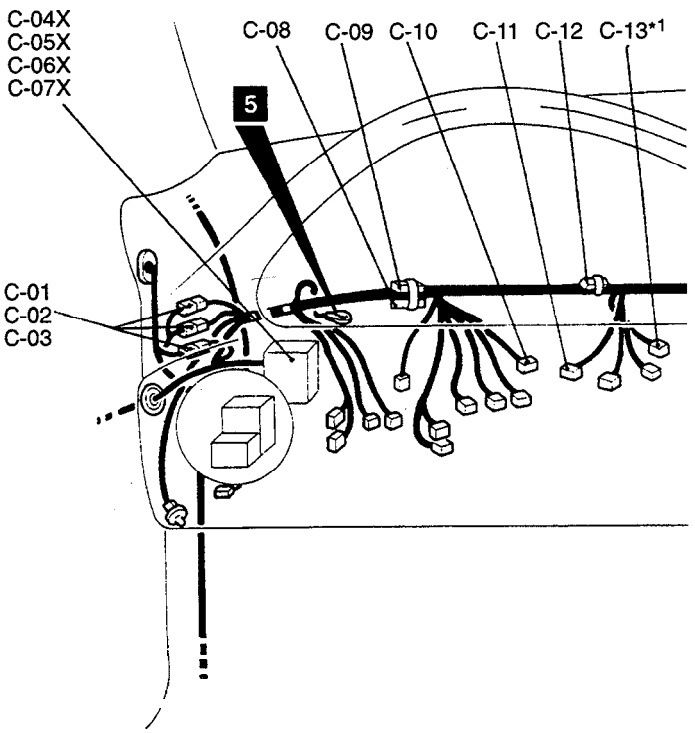
This particular wire is one of the tougher ones to locate. C69 is part of the junction block next to the driver's left foot. Look for the 8 pin connector with a green white wire on pin 6.

3000GT Specific Wiring diagrams

The following pages are excerpted from the 3000GT shop manual. Use the configuration diagrams to find the appropriate connector locations. Consult the manual for further detail.

DASH PANEL

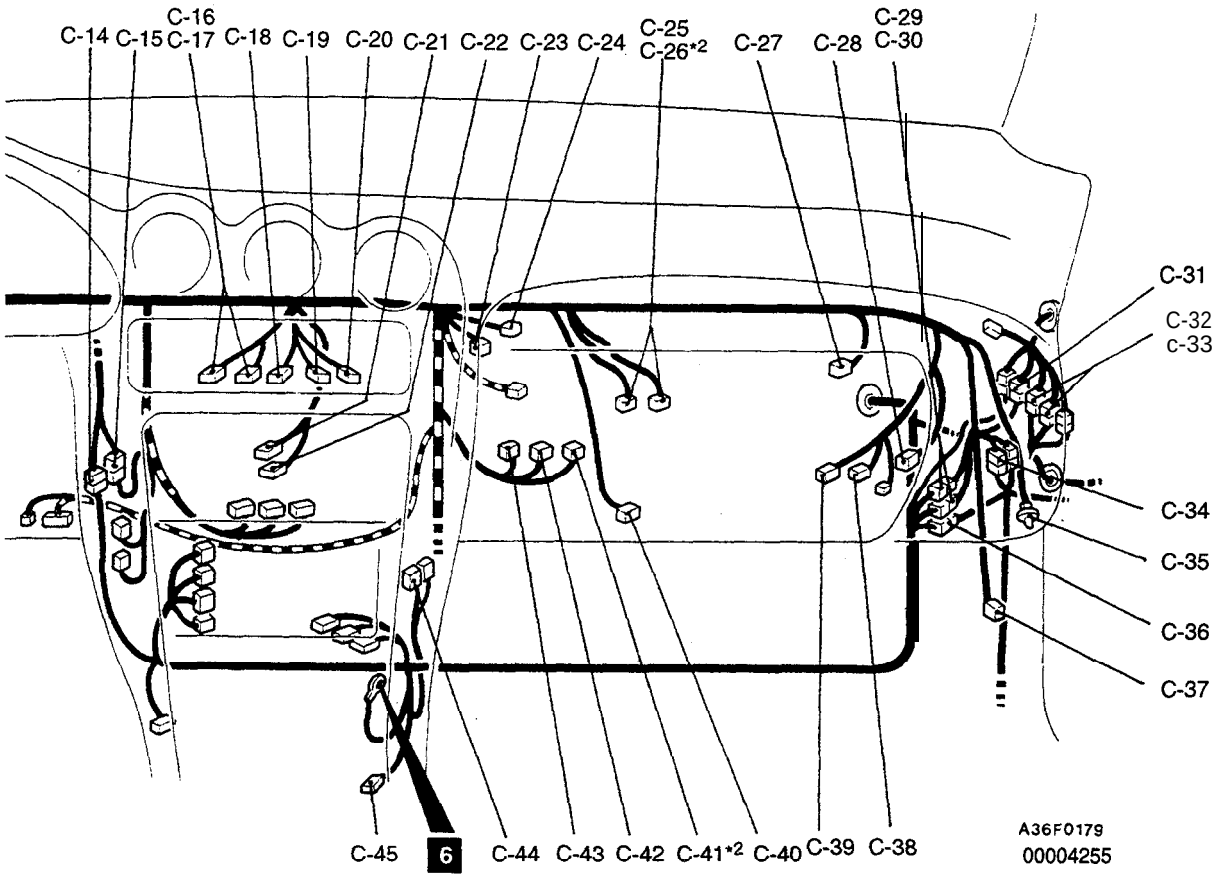
Connector symbol
C 01 thru 45



NOTE
*1: 1992 models
*2: Up to 1995 models

C-01 Body wiring harness (LH) and front wiring harness combination
C-02 Body wiring harness (LH) and front wiring harness combination
c-o.3 Body wiring harness (LH) and front wiring harness combination
C-04X Door lock power relay 1
C-06X Defogger relay
C-07X Power window relay
C-08 Diode (for seat belt warning circuit)
C-09 Diode (for seat belt warning circuit)
C-10 Column switch
C-11 Column switch
C-12 Diode (for theft-alarm circuit)
c-13 Accelerator pedal **switch***1
c-14 Control wiring harness and instrument panel wiring harness combination
C-15 Body wiring harness (LH) and instrument panel wiring harness combination
C-l 6 Air conditioning control panel
C-17 Air conditioning control panel
C-l 8 Air conditioning switch
C-19 Blower switch
C-20 Heater control panel illumination light
c-21 Blend air damper control motor
c-22 Mode selection damper control motor
C-23 Power transistor (for full-auto air conditioning circuit)
C-24 Blower resistor

TSB **Revision**

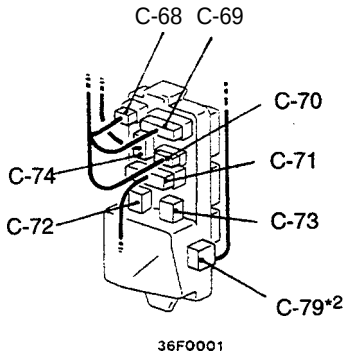


C-25	Air conditioning control unit <Manual air conditioning>
C-26	Air conditioning control unit*2 <Manual air conditioning>
C-27	Air-inlet sensor <Full-auto air conditioning>
C-28	Air selection damper control motor
c-29	Body wiring harness (LH) and control wiring harness combination
C-30	Body wiring harness (LH) and control wiring harness combination
c-31	Body wiring harness (LH) and front wiring harness combination
C-32	Body wiring harness (RH) and front wiring harness combination
c-33	Body wiring harness (RH) and front wiring harness combination
c-34	Body wiring harness (LH) and body wiring harness (RH) combination
c-35	Foot light (RH)
C-36	Body wiring harness (RH) and control wiring harness combination
c-37	Auto-cruise control unit
C-38	Blower motor
c-39	Blower motor relay (HI)
C-40	Air conditioning compressor lock controller
c-41	Air-inlet sensor <Manual air conditioning>*2
C-42	Air-thermo sensor
c-43	Engine coolant temperature sensor
C-44	MFI relay
c-45	Over drive and power / economy switch

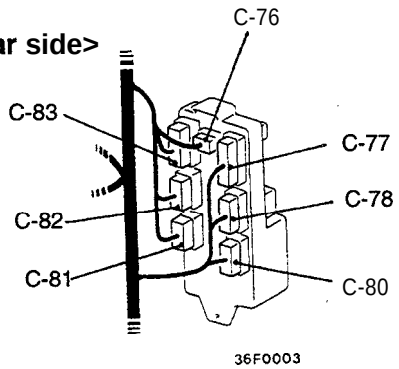
TSB Revision

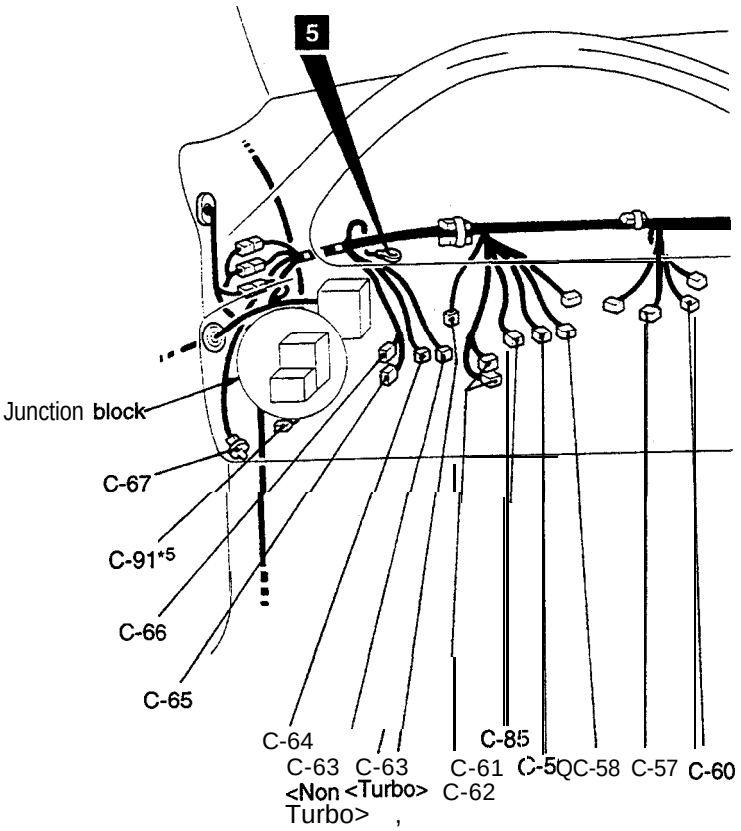
Connector symbol
C 46 thru 95

JUNCTION BLOCK
<Front side>



<Rear side>



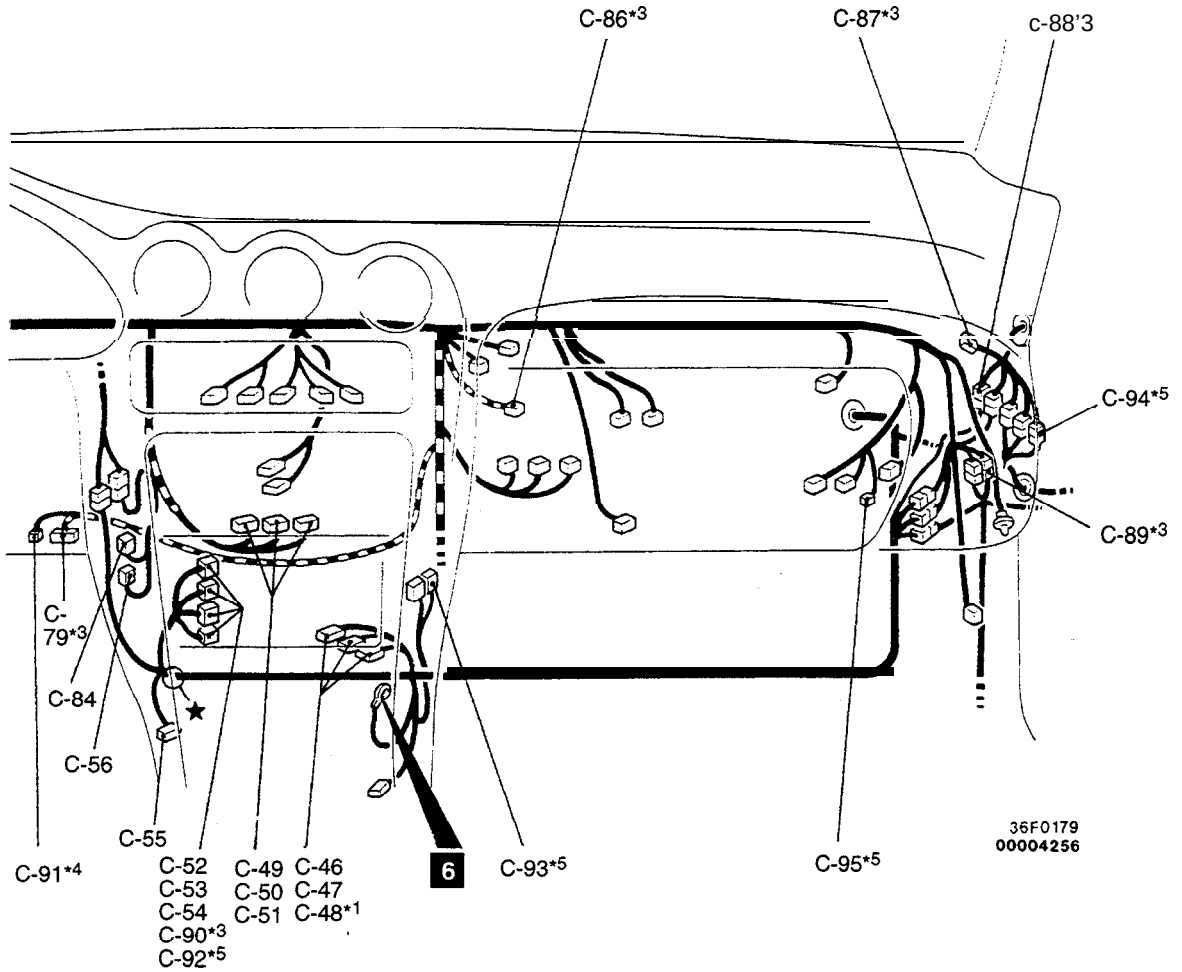


NOTE

(1) *1: 1992 Up to models 1993 models
(2) *3: From 1994 models
(4) *4: 1995 models
(5) *5: From 1996 models

C-46 ELC-4 A/T control module
c-47 ELC-4 A/T control module
C-48 ELC-4 A/T control module*1
c-49 Air conditioning control unit <Full-auto conditioning>
C-50 Air conditioning control unit <Full-auto conditioning>
c-51 Air conditioning control unit <Full-auto conditioning>
C-52 Engine control module
c-53 Engine control module
C-54 Engine control module
c-55 Left bank heated oxygen sensor (front) <Non-Turbo except for California>
C-56 Theft-alarm starter relay
c-57 Clock spring
C-58 Key reminder switch
c-59 Ignition switch
C-60 Steering wheel angle speed sensor
C-61 Stop light switch
C-62 Stop light switch
C-63 Clutch pedal position switch (for auto-cruise control circuit)
C-64 Clutch pedal position switch (for theft-alarm circuit)
C-65 ETACS unit
C-66 ETACS unit
C-67 Foot light (LH)
C-68 Front wiring harness and junction block combination
C-69 Front wiring harness and junction block combination
C-70 Front wiring harness and junction block combination

TSB Revision



c-71	Adapter wiring harness and junction block combination
C-72	Theft-alarm horn relay
c-73	Blower motor relay
c-74	Roof wiring harness and junction block combination
C-76	Body wiring harness (LH) and junction block combination
c-77	Body wiring harness (LH) and junction block combination
C-78	Body wiring harness (LH) and junction block combination
c-79	Data link connector*3
C-80	Body wiring harness (LH) and junction block combination
C - 8 1	Body wiring harness (LH) and junction block combination
C-82	Body wiring harness (LH) and junction block combination
C-83	Body wiring harness (LH) and junction block combination
C-84	Auto-cruise relay
C-85	Spare connector (Hand free microphone)
C-86	Passenger's air bag module*3
C-87	No connection <Turbo>
C-88	Control wiring harness and front wiring harness combination*3
C-89	Body wiring harness (LH) and body wiring harness (RH) combination*3
C-90	Engine control module*3 <Turbo, Non Turbo – Up to 1995 models for California>
c-91	Data link connector <Convertible>*4,*5
c-92	Engine control module*5
c-93	MFI relay*5
c-94	Body wiring harness (RH) and front wiring harness combination*5
c-95	Motor antenna control unit*5

TSB Revision

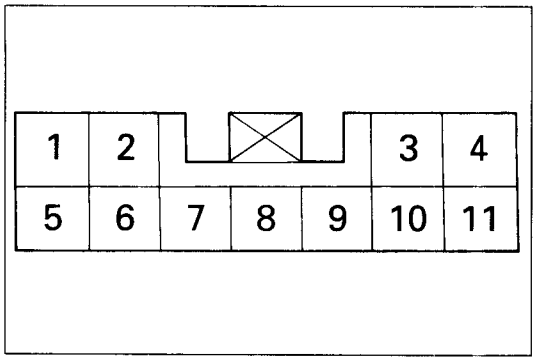
- No response from hardtop system should be noticed when the switch is pressed.

  NOTE
  Depending on the position of the hard tonneau, the tonneau latches may release again, and the tonneau may continue to open.

With hard tonneau initially fully closed:
- The LED to the right of the switch should blink, and the chime sound at a rate of 1 cycle per second. And, the hard tonneau latches should release.

- If the switch LED appears to be working, but the hardtop system does not respond to the switch inputs, refer to **Diagnostics and Testing** in this section.

- If the switch LED does not appear to be working, and the hardtop system does react to the switch inputs, perform the switch inspection in Step 2.



2. OFF-CAR INSPECTION

Operate the switch to check the continuity between the terminals.

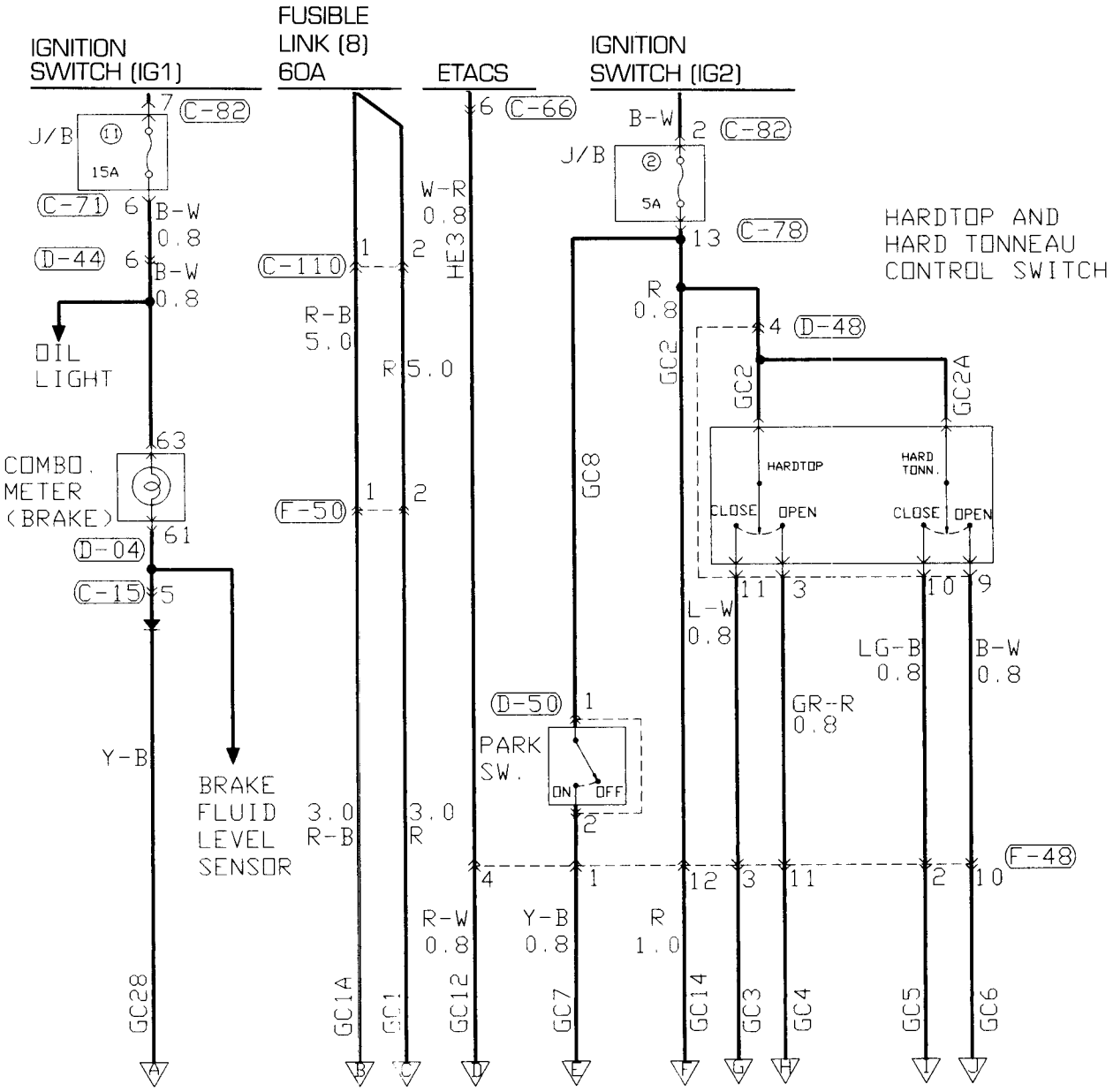
Switch position	Terminal	OPEN	CLOSE
Hardtop Switch	3	○	
	4	○	○
	11		○
Hard tonneau switch	4	○	○
	9	|	○
	10	○	
Switch Illumination (incandescent bulbs)	1	○	
	5	○	

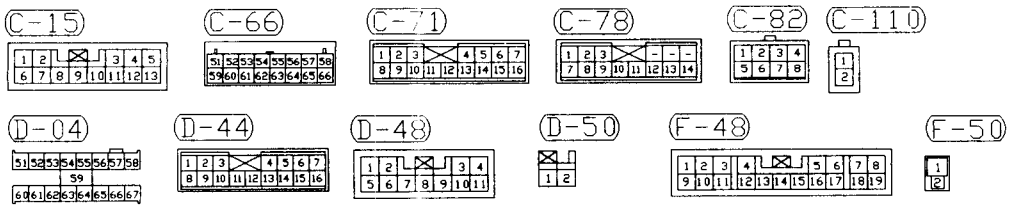
NOTE
○—○ indicates that there is continuity between the terminals.

INSPECTION OF SWITCH LEDs

The switch LEDs must be tested using the **Pinpoint Tests** in **Diagnostics and Testing** in this section.

RETRACTABLE HARDTOP ELECTRONIC CONTROL UNIT, (ECU) POWER DISTRIBUTION CIRCUIT DIAGRAM





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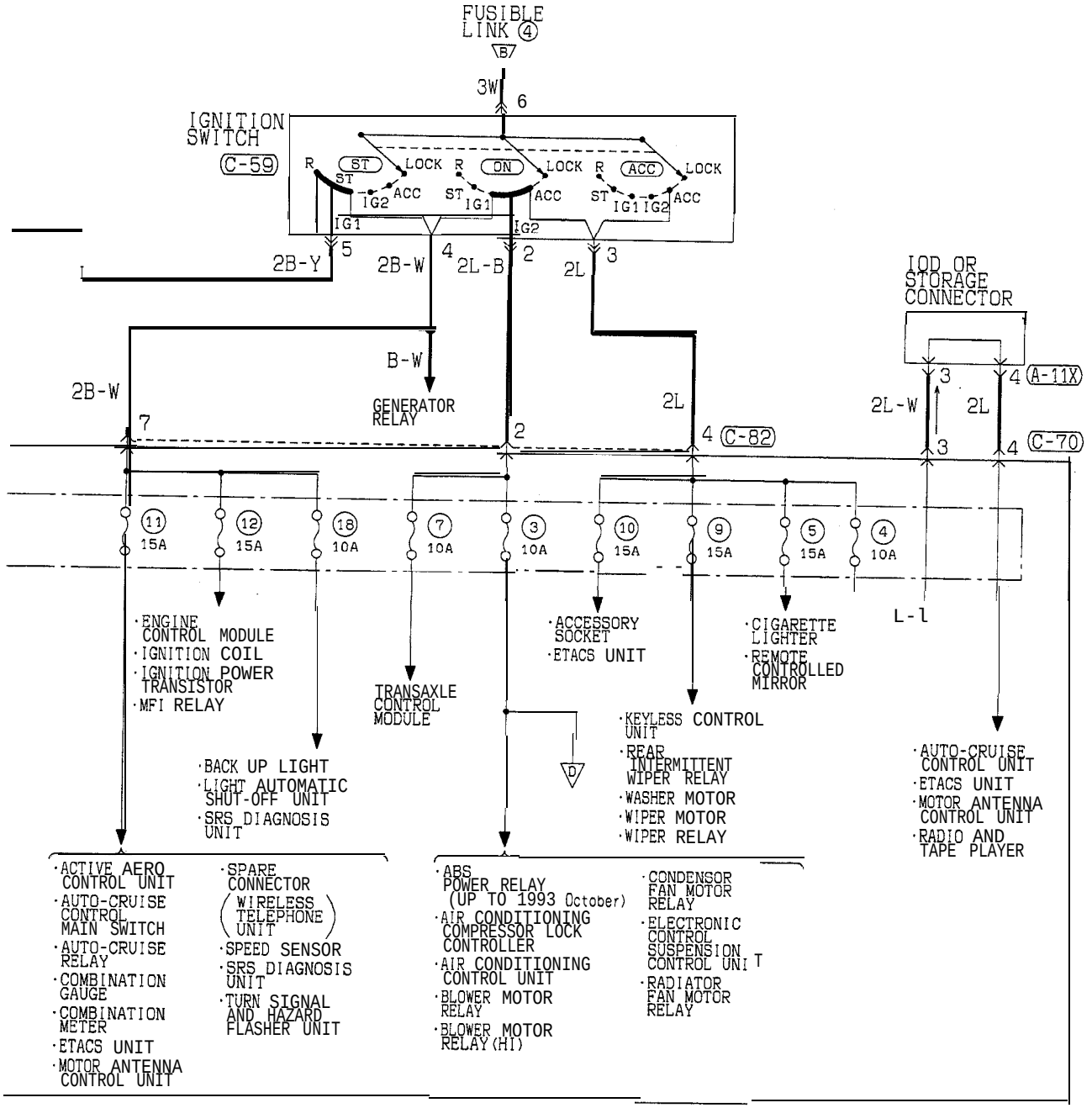
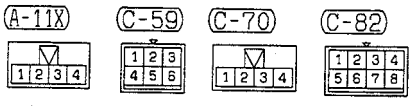


REMARK
THE ABOVE CIRCUIT DIAGRAM SHOWS THE CURRENT FLOW AT THE IGNITION KEY POSITION "ACC", "ON" AND "ST" COMBINED. BE SURE TRACE THE APPROPRIATE CIRCUIT DEPENDING ON THE IGNITION KEY POSITION.



HR01M01BB

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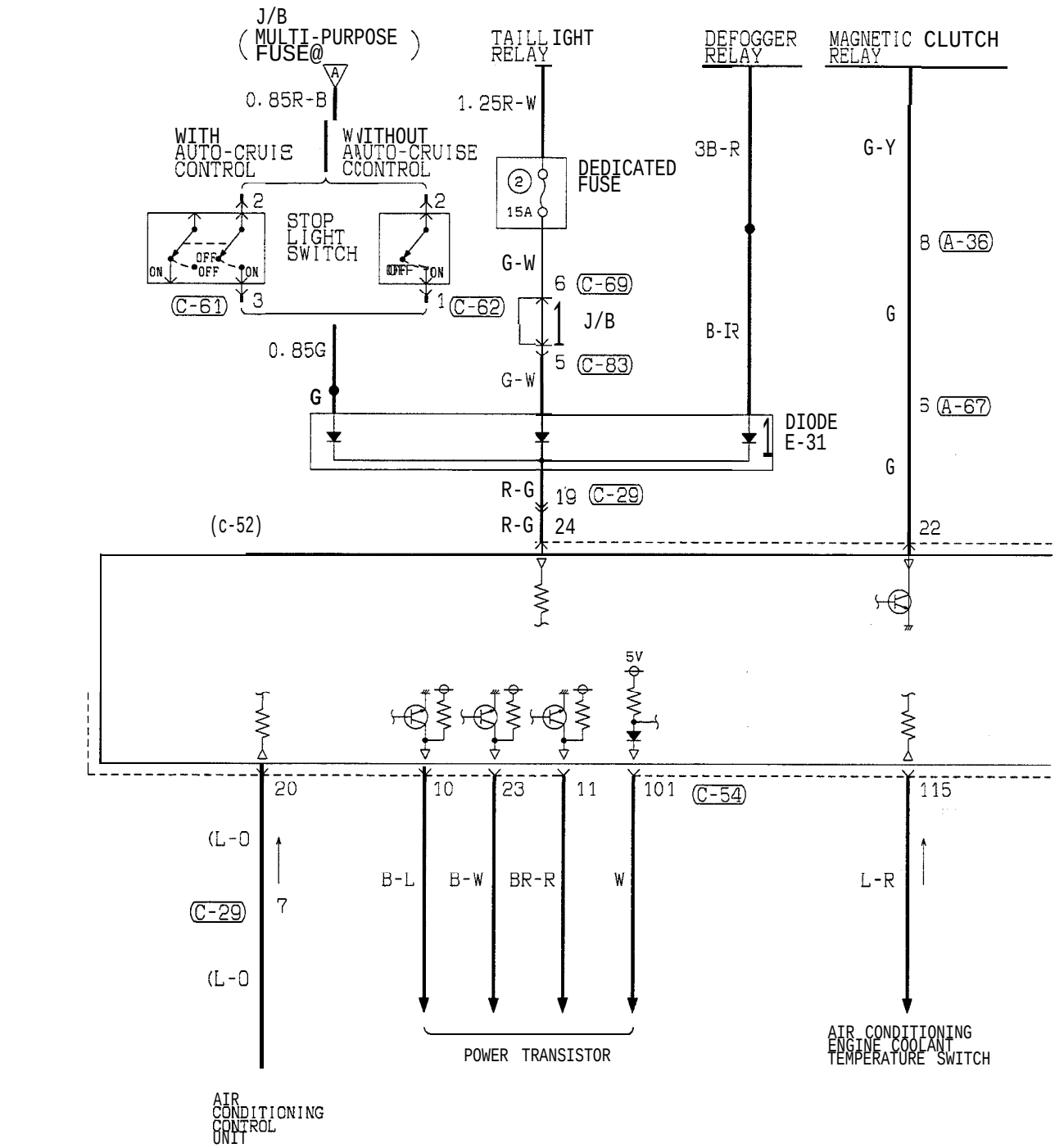
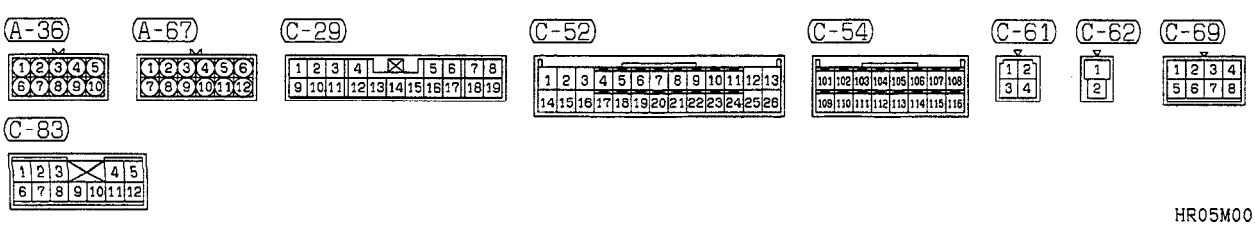
MFI CIRCUIT (1992 MODEL) <NON TURBO> (CONTINUED)





HR05M00CA

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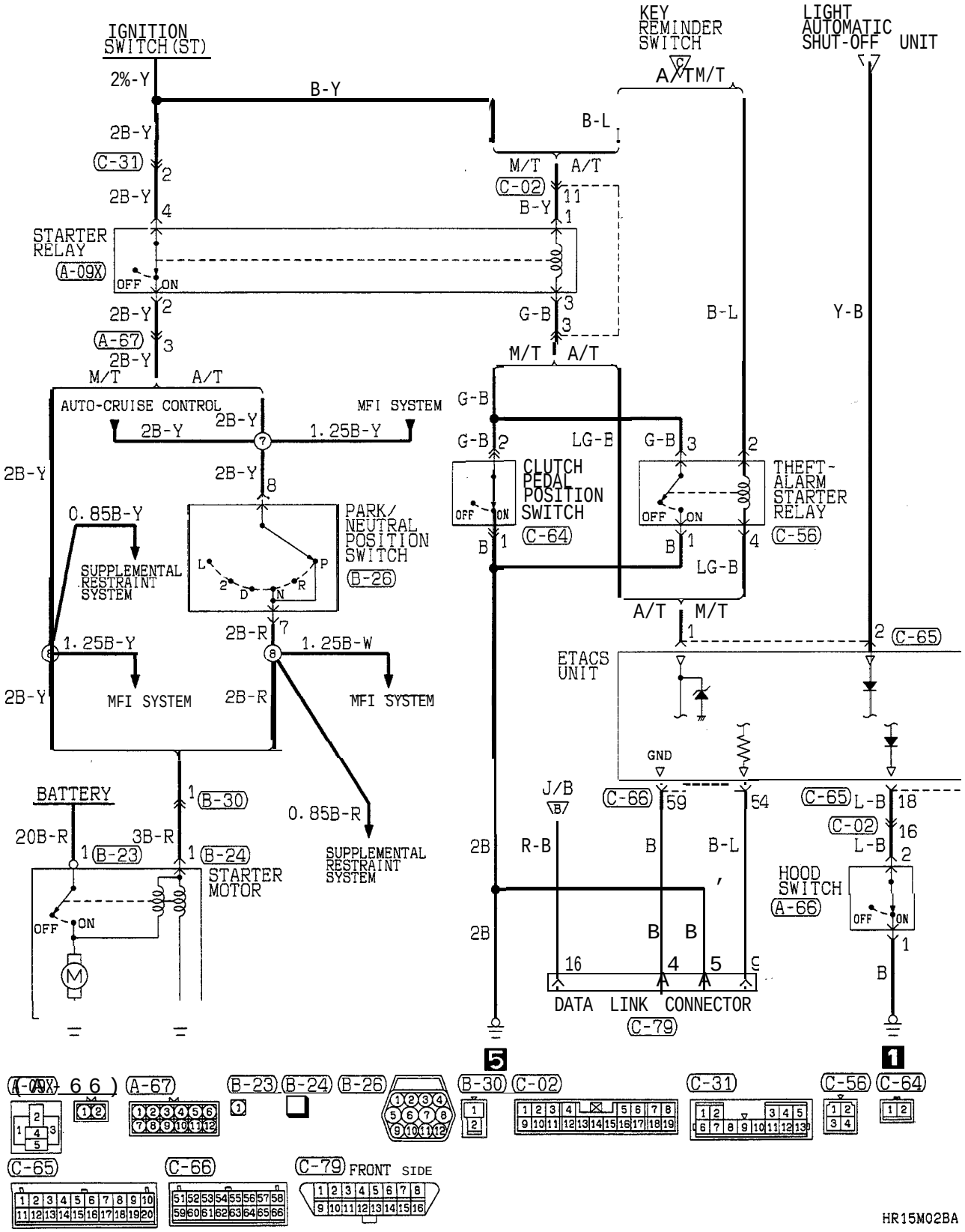
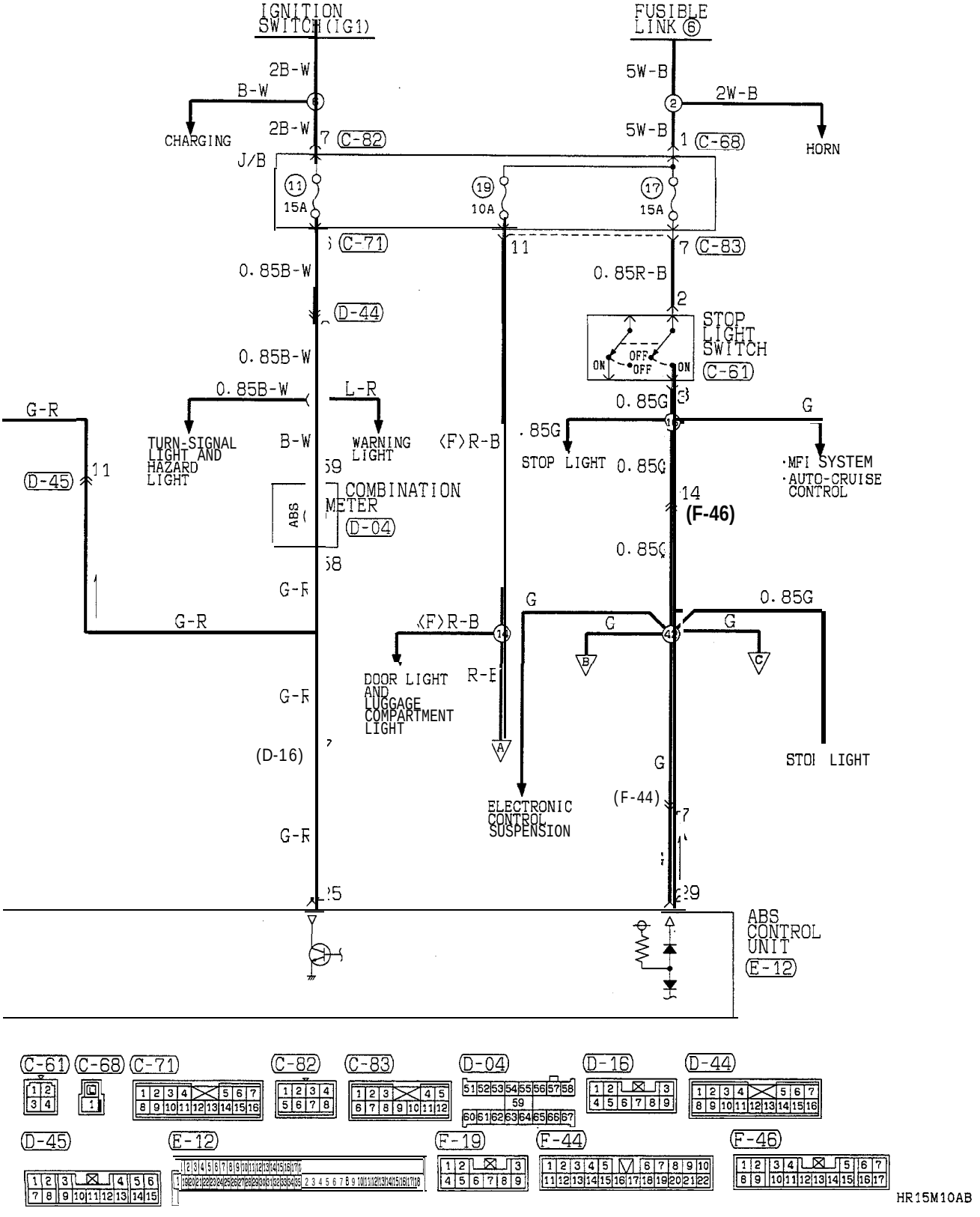
CIRCUIT DIAGRAM (CONTINUED)



TSB Revision



HR15M10AB

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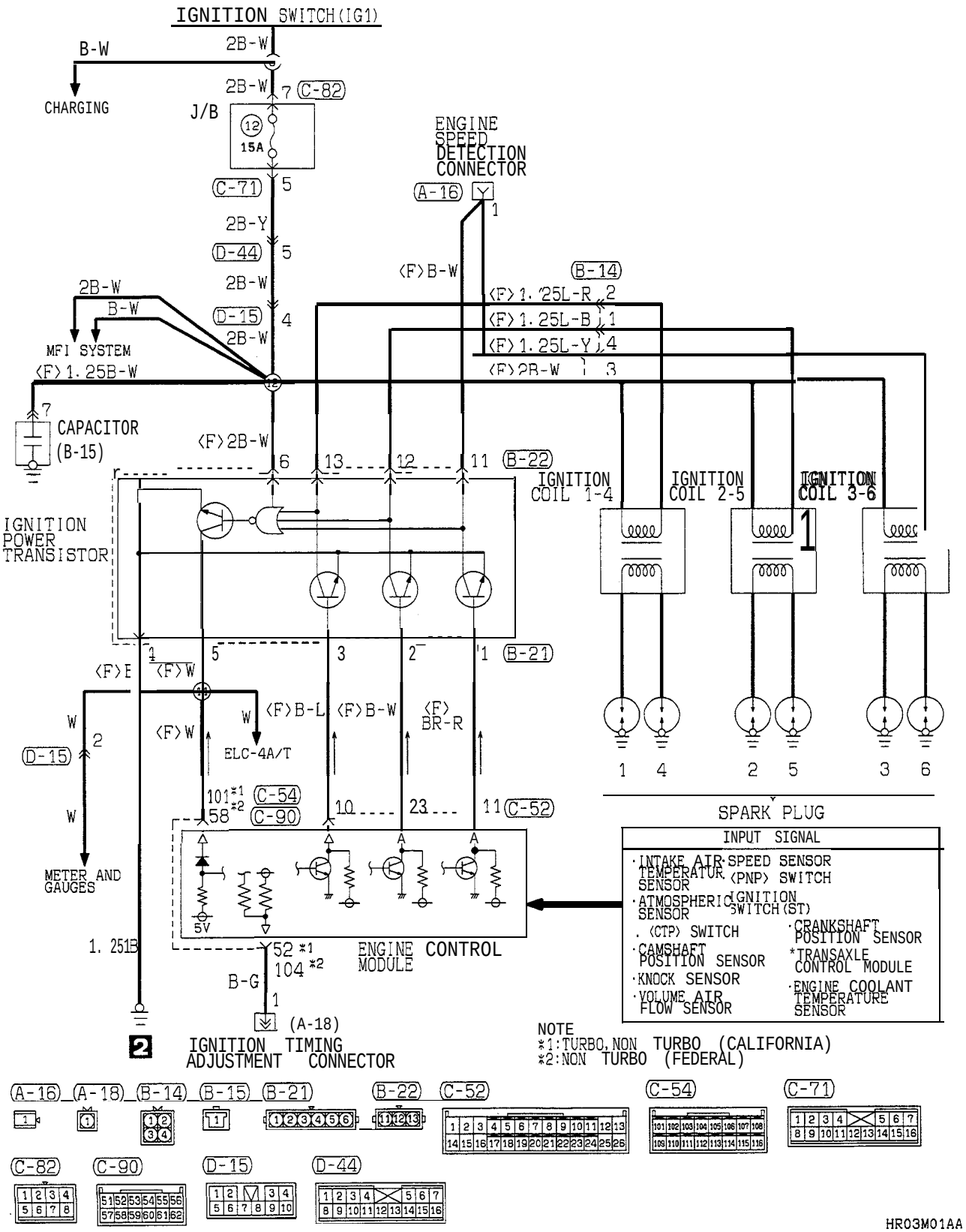
(UP TO 1995 MODELS)

CIRCUIT DIAGRAM



HR03M01AA

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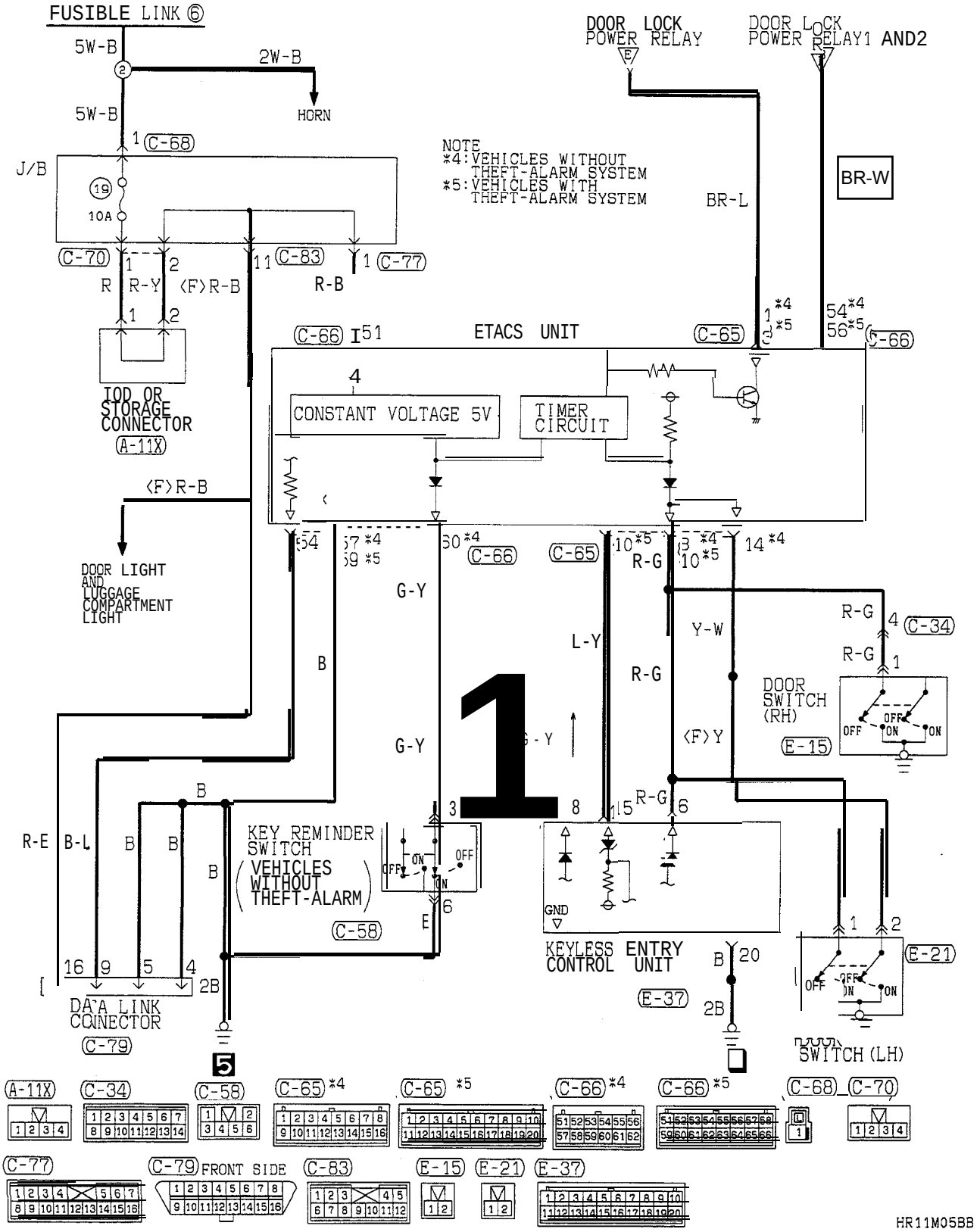

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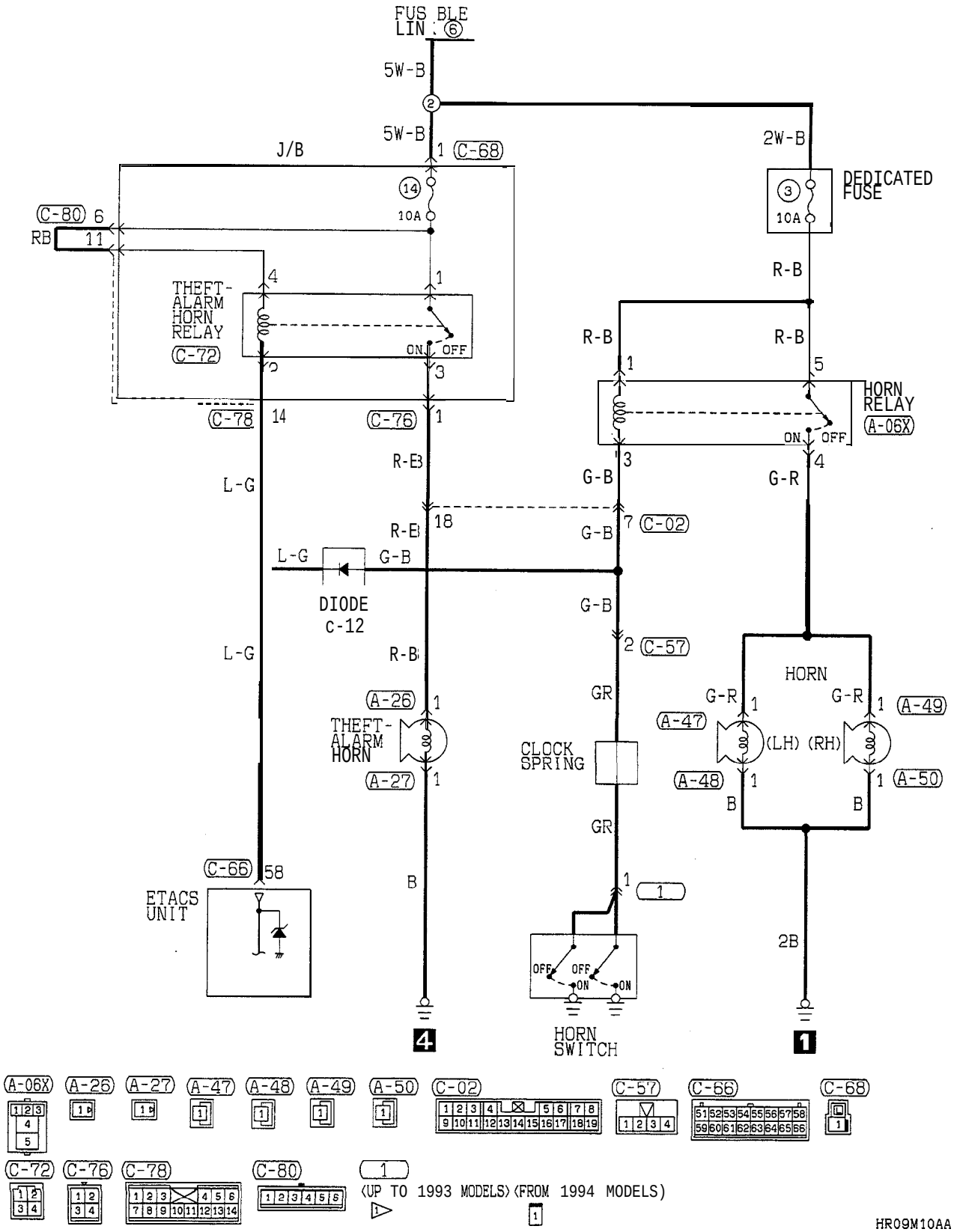
<VEHICLES WITH THEFT-ALARM SYSTEM>



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